

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.

fr



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/629,653	08/01/2000	Nicolas Vazquez	5150-45000	7618
35690	7590	06/29/2004	EXAMINER	
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.			KISS, ERIC B	
P.O. BOX 398			ART UNIT	
AUSTIN, TX 78767-0398			PAPER NUMBER	

2122

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

fr

Office Action Summary

Application No.

09/629,653

Applicant(s)

VAZQUEZ ET AL.

Examiner

Eric B. Kiss

Art Unit

2122

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 27-59 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The reply filed April 23, 2004, has been received and entered. Claims 27-59 are pending.

Drawings

2. The drawings were received on April 26, 2004. These drawings are acceptable. The objection to the drawings, as detailed in the previous Office action, is withdrawn in view of Applicant's submitted replacement drawing sheets.

Admitted Prior Art

3. If Applicant does not seasonably traverse the well-known statement during examination, then the object of the well known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, Applicant is charged with rebutting the well-known statement in the next reply after the Office action in which the well-known statement was made. This is necessary because the Examiner must be given the opportunity to provide evidence in the next Office action or explain why no evidence is required. If the Examiner adds a reference to the rejection in the next action after applicant's rebuttal, the newly cited reference, if it is added merely as evidence of the prior well known statement, does not result in a new issue and thus the action can potentially be made final.

- a. The object of the following statement is taken to be admitted prior art:

It has been known to include within benchmark results, in addition to empirical results for a particular execution, minimum/maximum results to establish comparative statistics for a particular result (see the statement of Official Notice in the rejection of claims 29 and 43 as detailed in the previous Office action).

- b. The object of the following statement is taken to be admitted prior art:

It has been known to provide a display of memory usage statistics as part of a performance monitoring system (see the statement of Official Notice in the rejection of claim 36 as detailed in the previous Office action).

Response to Arguments

4. Applicant's arguments with respect to claims 47 and 51 have been considered but are moot in view of the new ground(s) of rejection. The new grounds of rejection presented below are necessitated by Applicant's amendments.

5. Applicant's arguments on pp. 12-14, with respect to claims 27, 41, 55, and 59 have been fully considered, but they are not persuasive.

Art Unit: 2122

a. In response to Applicant's arguments on p. 12, with respect to claims 55 and 59, the Examiner respectfully points out that Applicant's claim terminology of "programmatically determining one or more suggested changes" is not synonymous with, and does not require, automatically generating suggested changes. The recited limitations do not preclude, for example, activity by the user indicating such changes through a graphical user interface interaction. Note that in this exemplary case, the user's interaction must be processed in order for the program to understand the user's changes. Thus, the program would determine what changes, if any, are indicated or suggested by the user, and the graphical user interface would be updated accordingly.

b. In response to Applicant's arguments on pp. 13-14 (with respect to claims 27 and 41), as stated in the previous Office action mailed November 13, 2003,

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The rejection in question relies upon the teachings of *Pizano et al.* to show that it has been known and shown to be desirable to determine an average amount of time required to execute an image processing algorithm in order to provide benchmark data for the algorithm.

Further, the Examiner maintains that measuring and displaying information indicating an amount of time that elapses during execution of an image processing algorithm is disclosed by *Blowers et al.* (see, for example, Fig. 9, along with the description of "TimeTaken" in the table of column 13). Therefore, the Examiner does not rely upon *Pizano et al.* to teach displaying time information as this is already disclosed by *Blowers et al.*

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 55-59 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,298,474 to Blowers et al.

As per claims 55-59, Blowers et al. disclose performing a plurality of image processing functions on an image in response to a user input (see column 2, lines 47-55); recording the plurality of image processing functions, wherein the one or more image processing functions define an image processing algorithm (task sequence generation; see column 8, line 61 through column 9, line 15); receiving user input specifying a plurality of images and executing the image processing algorithm on each of said plurality of images (executing the sequence; see column 9, lines 16-25); measuring and displaying information indicating an amount of time that elapses during said executing the image processing algorithm (see, for example, Fig. 9, along with the description of "TimeTaken" in the table of column 13); displaying information indicating suggested changes to the image processing algorithm in order to reduce the execution time of the image processing algorithm; receiving user input requesting the suggested changes to be made automatically; and programmatically making the indicated changes to the image processing algorithm by changing parameter values associated with image processing functions (see, for

example, the "Stop Result By" and "Stop Result Count" fields in the "Blob Properties" dialog box of Fig. 7).

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 47, 49-51, 53, and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,298,474 to Blowers et al. in view of U.S. Patent No. 5,724,494 to Politis.

As per claims 47 and 51, Blowers et al. disclose performing one or more image processing functions on an image in response to user input (see column 2, lines 47-55); recording the one or more image processing functions, wherein the one or more image processing functions define an image processing algorithm (task sequence generation; see column 8, line 61 through column 9, line 15); executing the image processing algorithm in response to user input, wherein said executing the image processing algorithm comprises executing executable code associated with each of said image processing functions defining the algorithm (executing the sequence; see column 9, lines 16-25); measuring and displaying information indicating an amount of time that elapses during said executing the image processing algorithm (see, for example, Fig. 9, along with the description of "TimeTaken" in the table of column 13); and programmatically changing the image processing algorithm in order to reduce the execution time of the image processing algorithm (see, for example, the "Stop Result By" and "Stop Result Count" fields in the "Blob

Art Unit: 2122

Properties" dialog box of Fig. 7). Blowers et al. fail to expressly disclose programmatically changing the image processing algorithm as not being performed directly in response to user input. However, Politis teaches that it has been known to apply automated optimizations to image processing algorithm, such optimizations involving, for example, changing a region of interest (bounding box) being processed and rearranging operations in a more efficient manner resulting in decreased execution time (see, for example, col. 17, line 56, through col. 18, line 16). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to modify the method and medium of Blowers et al. to include such automatic optimizations as per the teachings of Politis. One would be motivated to do so to gain the advantage of decreased execution time without having to manually optimize a given algorithm.

As per claims 49, 50, 53 and 54, Blowers et al. further disclose programmatically changing one or more parameters, including changing a number of pixels used, in at least one image processing function in the algorithm (see, for example, Figs. 7 and 8; and column 9, lines 7-15). Therefore, for reasons stated above, such claims also would have been obvious.

10. Claims 48 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,298,474 to Blowers et al. in view of Neil Thacker, "Introduction," 1998 (hereinafter *Thacker*) and further in view of U.S. Patent No. 5,724,494 to Politis. Note that *Thacker* was cited in the previous Office action in support of a previous statement of Official Notice taken in the rejection of claims 48 and 52.

As per claims 48 and 52, in addition to the disclosure and teachings applied above to claims 47 and 51, Blowers et al. fail to expressly disclose receiving a user input to undo changes. However, *Thacker* discloses a tool to be used as a rapid general purpose image processing algorithm development tool (see the first sentence). This tool further provides an "Undo" function to reverse the most recent stack manipulation (programmatic change; see the second-to-last sentence). Thus, it is submitted that, even in the narrowly-focused field of image processing algorithm development, functionality to undo programmatic changes would have been obvious to one of ordinary skill in the art at the time the invention was made. Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of Blowers et al. to include an undo command selectable by a user for undoing changes made to the image processing algorithm. One would be motivated to do so gain the advantage of allowing the user to correct unintentional changes.

11. Claims 27-30, 33-44, and 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,298,474 to Blowers et al. in view of U.S. Patent No. 5,293,429 to Pizano et al.

As per claims 27 and 41, Blowers et al. disclose performing a plurality of image processing functions on an image in response to a user input (see column 2, lines 47-55); recording the plurality of image processing functions, wherein the one or more image processing functions define an image processing algorithm (task sequence generation; see column 8, line 61 through column 9, line 15); receiving user input specifying a plurality of images and executing the image processing algorithm on each of said plurality of images (executing the sequence; see

Art Unit: 2122

column 9, lines 16-25); measuring and displaying information indicating an amount of time that elapses during said executing the image processing algorithm (see, for example, Fig. 9, along with the description of "TimeTaken" in the table of column 13). Blowers et al. fail to expressly disclose determining an average amount of time required to execute the image processing algorithm. However, Pizano et al. teach determining an average amount of time required to execute an image processing algorithm by using a plurality of input images (see column 11, lines 34-42). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of Blowers et al. to include determining an average amount of time required to execute an image processing algorithm by using a plurality of input images as per the teachings of Pizano et al. One would be motivated to do so to be able to benchmark an image processing system and produce a meaningful estimate of system capabilities.

As per claims 28 and 42, Blowers et al. further disclose displaying information indicating a rate at which the image processing algorithm is capable of processing images, based on the amount of time that elapses during said executing the image processing algorithm (see, for example, Fig. 9, along with the description of "GetMinimumTime" in the table of column 13). Blowers et al. fail to expressly disclose basing the rate on the average execution time. However, as described above, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of Blowers et al. to include determining an average amount of time required to execute an image processing algorithm by using a plurality of input images as per the teachings of Pizano et al. One would be motivated to do so

to be able to benchmark an image processing system and produce a meaningful estimate of system capabilities.

As per claims 29 and 43, Blowers et al. further disclose determining the minimum time required for executing the image processing algorithm (see the description of "GetMinimumTime" in the table of column 13) but fail to expressly disclose displaying this information. However, as admitted prior art (see the discussion above under the heading "Admitted Prior Art") it has been known to include within benchmark results, in addition to empirical results for a particular execution, minimum/maximum results to establish comparative statistics for a particular result. Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to further modify the method of *Blowers et al.* to include displaying the minimum time required to execute the image processing algorithm. One would be motivated to do so to provide the user with additional, readily-available information to provide a more complete benchmark of the developed program.

As per claims 30 and 44, Blowers et al. further disclose displaying time information corresponding to each execution iteration in a structure display (see, for example, the rolling results window in Fig. 9).

As per claims 33-35 and 46, Blowers et al. disclose measuring an amount of time that elapses during said executing the image processing algorithm for each of a plurality of image processing categories (see, for example, Fig. 9, along with the description of "TimeTaken" in the table of column 13; the tasks of Blowers et al. include such categories as acquisition, control-flow, and image data manipulation); and displaying information indicating the amount of time that elapses during said executing the image processing algorithm for each of the plurality of

image processing categories (see "Time Taken" for various categories illustrated in Fig. 9).

Blowers et al. fail to expressly disclose determining average amounts of time. However, as described above, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to modify the method of Blowers et al. to include determining an average amount of time required to execute an image processing algorithm by using a plurality of input images as per the teachings of Pizano et al. One would be motivated to do so to be able to benchmark an image processing system and produce a meaningful estimate of system capabilities.

As per claim 36, Blowers et al. further disclose determining memory requirements for the image processing functions (see, for example, the description of "GetMemorySize" in the table of column 13) but fail to expressly disclose displaying this information. However, as admitted prior art, it has been known to provide a display of memory usage statistics as part of a performance monitoring system (see the discussion above under the heading "Admitted Prior Art"). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to further modify the method of *Blowers et al.* to include displaying memory requirements for the image processing functions. One would be motivated to do so to provide useful resource information and indicate resource bottlenecks.

As per claim 37, Blowers et al. further disclose generating a graphical data flow diagram that implements the image processing algorithm (see, for example, Fig. 6 and column 8, lines 61-67). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claims 38-40, Blowers et al. further disclose displaying information indicating suggested changes to the image processing algorithm in order to reduce the execution time of the

Art Unit: 2122

image processing algorithm; receiving user input requesting the suggested changes to be made automatically; and programmatically making the indicated changes to the image processing algorithm by changing parameter values associated with image processing functions (see, for example, the "Stop Result By" and "Stop Result Count" fields in the "Blob Properties" dialog box of Fig. 7). Therefore, for reasons stated above, such claims also would have been obvious.

12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Blowers et al. in view of Pizano et al. as applied to claim 30 above, and further in view of U.S. Patent No. 5,748,878 to Rees et al.

As per claim 31, Blowers et al. discloses displaying time information in a structured display (see the disclosure applied above to claim 30) but fail to expressly disclose receiving a user input to sort the time information. However, Rees et al. teach a function performance structured display comprising time information corresponding to a plurality of execution iterations, wherein the structured display further comprises a "Sort_" menu item (see Fig. 9). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to further modify the method of Blowers et al. to include a structured display with user-selectable sort capabilities as per the teachings of Rees et al. One would be motivated to do so to gain the advantage of allowing the user to customize a structure data display to suit his or her needs or preferences.

Art Unit: 2122

13. Claims 32 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blowers et al. in view of Pizano et al. as applied to claim 27 above, and further in view of "Solaris User's Guide," 1995, Sun Microsystems, Inc. (hereinafter *SUG*).

As per claims 32 and 45 Blowers et al. in combination with Pizano et al. suggest such a method (see disclosure and teachings applied above to claims 27 and 41) but fail to expressly disclose displaying a clock icon, which visually indicates the time data. However, *SUG* teaches a Performance Meter window with a dial display for monitoring aspects of system performance (see pages 323-330). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time the invention was made to further modify the method of Blowers et al. to include such a display for visually indicating the time data. One would be motivated to do so enhance the aesthetic qualities of a performance display.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

Art Unit: 2122

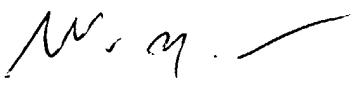
MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

16. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (703) 305-7737. The Examiner can normally be reached on Tue. - Fri., 7:30 am - 5:00 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EBK / ESK
June 17, 2004


WEI Y. ZHEN
PRIMARY PATENT EXAMINER